



Adrian C. Lo

Neuroscientist, Data Analyst

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About Me

I am a neuroscientist with a background in psychology and expertise in **statistics**. While during the last 5 years I have been studying rodent behavior and molecular biology, I gained expertise in **developing programs** and **shiny apps**. These programs vastly improved the data-processing pipeline for myself as well as colleagues.

Languages

- Dutch ● ● ● ● ●
- English ● ● ● ● ●
- French ● ● ● ● ●
- German ● ● ● ● ●

Computer Skills

- R ● ● ● ● ●
- R Markdown ● ● ● ● ●
- Shiny ● ● ● ● ●
- Machine Learning ● ● ● ● ●
- SQL ● ● ● ● ●
- SPSS ● ● ● ● ●
- Python ● ● ● ● ●
- HTML ● ● ● ● ●
- SAS ● ● ● ● ●
- LaTeX ● ● ● ● ●
- Ethovision ● ● ● ● ●

Working Experience

- 2016 – present **Neuroscientist** Université de Lausanne, Switzerland
Post-doctoral research on the involvement of the RNA binding protein FXR2P in status epilepticus: Behavioral and molecular evaluation (Laboratory of Prof. Claudia Bagni)
- 2014 – 2015 **Neuroscientist** KU Leuven, Belgium
Post-doctoral research on cue competition and contextual fear learning in rodents and humans. (Laboratory of Prof. Bram Vervliet)

Education

- 2015 **Summer school** Center for Excellence, Belgium
Emotional Learning and Memory in Health and Psychopathology
- 2014 **Neuroscience Summer Program** RIKEN BSI, Japan
- 2011 **Training in the use of the IntelliCage** University of Zürich, Switzerland
- 2008 – 2013 **PhD student, Neuroscientist** KU Leuven, Belgium
Dissertation: "Mouse models of Alzheimer's disease: behavioral validity and use in preclinical therapy evaluation". Mentors: Prof. Rudi D'Hooge and Prof. Bart De Strooper
- 2007 – 2008 **Internship** KU Leuven, Belgium
Dissertation: "Visual spatial learning in C57BL/6J mice: proximal and distal cue-related learning in the Barnes maze and radial arm maze. The involvement of dorsal hippocampus in the Barnes maze". Mentors: Prof. Rudi D'Hooge and Dr. Ilse Gantois
- 2003 – 2008 **Master of Science in Theoretical Psychology** KU Leuven, Belgium
Dissertation: "The relationship between working memory and (non-)focal search processes in prospective memory". Mentor: Prof. Géry Van Ouytrve d'Ydewalle

Certificates and Courses

- 12/2019 Advanced R Shiny SIB, Switzerland
- 01/2019 Data Management Plan SIB, Switzerland
- 10/2018 Project Management EPFL, Switzerland
- 09/2018 Introduction to Data Analysis with Python EPFL Extension School, Switzerland
- 06/2018 Statistical Methods for Big Data in Life Sciences and Health with R SIB, Switzerland
- 09/2015 Introduction to SAS LSTAT, Belgium
- 05/2015 Text Mining with R KU Leuven, Belgium
- 09/2013 FELASA C - Laboratory Animal Sciences KU Leuven, Belgium

My R programs portfolio

meaR (public repository)

The output files from [Multi-Electrode Arrays](#) contain electrophysiological data and are scanned and extracted for only the numeric data. In the master dataframe, meaR performs calculations for a variety of electrophysiological parameters and visualizes spike and burst activity for all 60 electrodes over time

phenotyper (private repository)

For the processing and analysis of [Phenotyper](#) data, we can use a cloud service upon payment. Through reverse engineering, the phenotyper program performs similarly to the cloud service and calculates additional behavioral parameters

easyPCR (private repository)

Mouse genotyping is a tedious process that requires prior to pipetting the identification of the sample's model, calculation of pre-mixes, and planning of the assembly plates for PCR and electrophoresis, which can easily take up to half a day time. With easyPCR, all these steps are automatically performed and presented in an R Markdown file ready for the user to follow

unidamr (private repository)

Through a Shiny app, behavioral data from *Drosophila* are analyzed, categorized as either sleep or awake state, and several parameters are calculated and analyzed

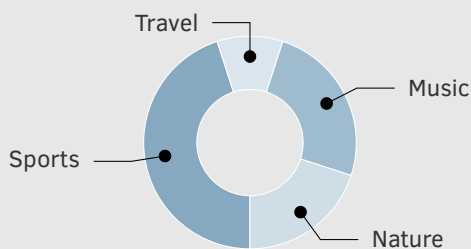
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Soft Skills



Extra-Curricular Activities



Teaching Experience

- 09/2019 **Unofficial Course at my department** Université de Lausanne, Switzerland
How to use R for data import, manipulation, visualization and analysis: for PhD students
- 09/2015 **Workshop at Summer School** KU Leuven, Belgium
Subject: "The use of rodent models in fear conditioning, learning and memory"
- 2013 **Bachelor Course at KU Leuven** B-KUL-POM20B
How to use SPSS for basic data manipulation and interpret SPSS output

Conferences and Presentations

- 2018 **NCCR-SYNAPSY Conference** Geneva, Switzerland
Cognitive flexibility in a mouse model for Fragile X Syndrome
- 2014 **RIKEN Brain Science Institute** Tokyo, Japan
Treatment with tauroursodeoxycholic acid modulates γ -secretase activity and rescues memory deficits in APP/PS1 mice, an AD mouse model
- 2012 **International Stockholm/Springfield symposium on advances in Alzheimer's disease** Stockholm, Sweden
Behavioural effects of selenium in mouse models of Alzheimer's disease
- 2010 **Forum of European Neurosciences** Amsterdam, The Netherlands
Reversible changes in neurocognitive performance and hippocampal synaptic plasticity in tau mutant mouse lines

Publications (5 most relevant)

For the full list, [please click here](#)

- 2019 **Nature Communications, 10, 3454**
The autism- and schizophrenia-associated protein CYFIP1 regulates bilateral brain connectivity and behaviour
Domínguez-Iturza N, Lo AC, Shah D, Armendáriz M, Vannelli A, Mercaldo V, Trusel M, Li KW, Gastaldo D, Santos AR, Callaerts-Vegh Z, D'Hooge R, Mameli M, Van der Linden A, Smit AB, Achsel T, Bagni C.
- 2017 **Nature Communications, 8, 293**
The non-coding RNA BC1 regulates experience-dependent structural plasticity and learning
Briz V, Restivo L, Pasciuto E, Juczewski K, Mercaldo V, Lo AC, Baatzen P, Gounko NV, Borreca A, Girardi T, Luca R, Nys J, Poorthuis RB, Mansvelter HD, Fisone G, Ammassari-Teule M, Arckens L, Krieger P, Meredith R, Bagni C.
- 2014 **Neuropharmacology, 85, 178-89**
SSP-002392, a new 5-HT₄ receptor agonist, dose-dependently reverses scopolamine-induced learning and memory impairments in C57Bl/6 mice
Lo AC, De Maeyer JH, Vermaercke B, Callaerts-Vegh Z, Schuurkes JA, D'Hooge R.
- 2013 **Neuropharmacology, 75, 458-66**
Dose-dependent improvements in learning and memory deficits in APPPS1-21 transgenic mice treated with the orally active A β toxicity inhibitor SEN1500
Lo AC, Tesseur I, Scopes DI, Nerou E, Callaerts-Vegh Z, Vermaercke B, Treherne JM, De Strooper B, D'Hooge R.
- 2013 **Science, 340, 924-e**
Comment on "ApoE-directed therapeutics rapidly clear β -amyloid and reverse deficits in AD mouse models"
Tesseur I*, Lo AC*, Roberfroid A, Dietvorst S, Van Broeck B, Borgers M, Gijssen H, Moechars D, Mercken M, Kemp J, D'Hooge R, De Strooper B. * authors contributed equally